TITLE: TRANSLATIONAL LOOP RF TRANSMITTER ARCHITECTURE FOR GSM RADIO

ABSTRACT OF THE INVENTION

Digital signal processing generates IF modulated digital data which is then converted to analog using a high sample rate digital-to-analog converter (DAC) without first producing a baseband signal that is to be upconverted to IF. The digital data has a high sample rate that is a whole multiple of a specified IF signal. A DAC converts the digital data into a continuous waveform IF signal that is produced to a feed-forward filter that eliminates spectral copies of the signal. The sample rate is selected so that harmonic signals do not appear in specified signal bands. Various embodiments include sample rates of 104 and 338 MHz (GSM application). The 26 MHz IF filtered signal produced by the feed-forward filter is then produced to a translational loop that produces a corresponding output oscillation (RF transmit signal).